

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-27 (Canceled)

28. (New) A zirconium phosphate with an exfoliated structure, provided in the form of a gel, whose content of organic compounds is of at most 1000 ppm, optionally at most 500 ppm.

29. (New) A zirconium phosphate with an exfoliated structure, in the form of a gel devoid of organic compounds chemically bonded to the phosphate.

30. (New) The phosphate as claimed in claim 29, having a content of organic compound of at most 1000 ppm, optionally of at most 500 ppm.

31. (New) The phosphate as claimed in claim 28, composed of particles exhibiting a form factor of between 100 and 5000.

32. (New) The phosphate as claimed in claim 28, wherein the gel exhibits a pH of at most 4, optionally at most 2.

33. (New) The phosphate as claimed in claim 28, presenting, by solid-state NMR analysis, shifts at -19 ppm and at least one other shift of between -20 ppm and -23 ppm.

34. (New) A zirconium phosphate with an exfoliated structure, provided in the form of a gel in an organic solvent and obtained from a phosphate as claimed in claim 28.

35. (New) A zirconium phosphate with an exfoliated structure, comprising an intercalation compound between its constituent sheets of particles and having been obtained from a phosphate as claimed in claim 28.

36. (New) The phosphate as claimed in claim 28, further comprising silica, alumina or titanium oxide.
37. A sodium zirconium phosphate, wherein it exhibits a Na/P ratio of greater than 0.5, optionally at least equal to 0.8.
38. (New) The phosphate as claimed in claim 37, providing, by acidification, a zirconium phosphate with an exfoliated structure in the form of a gel, whose content of organic compounds is of at most 1000 ppm, optionally at most 500 ppm.
39. (New) The phosphate as claimed in claim 37, providing, by acidification, a zirconium phosphate with an exfoliated structure in the form of a gel, devoid of organic compounds chemically bonded to the phosphate.
40. (New) The phosphate as claimed in claim 37 provided in the form of a dispersion with a pH of at least 7, optionally of at least 9.
41. (New) A zirconium phosphate, presenting, by solid-state NMR analysis, shifts at -19 ppm and at least one other shift of between -20 ppm and -23 ppm and an X-ray diffraction diagram with peaks at 10.66, 5.32 and 7.65.
42. (New) A process for the preparation of the zirconium phosphate as claimed in claim 28, comprising the steps of:
  - (a) forming an aqueous dispersion of a crystalline zirconium phosphate;
  - (b) adding a sodium compound to said dispersion in an amount such that the Na/P ratio is greater than 0.5, optionally at least equal to 0.8; and
  - (c) subsequently adding an acid, whereby either a gel or a solid compound is obtained, which solid compound is re-suspended in water and gives a gel.

43. (New) The process according to claim 42, wherein the crystalline zirconium phosphate is prepared by precipitating, in an acidic medium, a zirconium phosphate from phosphoric acid and from a zirconium compound, the zirconium being in the IV oxidation state, and by then optionally subjecting the product obtained to a heat treatment.
44. (New) The process as claimed in claim 42, wherein use is made, in step (c), the acid is hydrochloric acid, sulfuric acid, nitric acid or phosphoric acid.
45. (New) The process as claimed in claim 42, wherein the acid is being added in stage (c) until a pH of at most 3 is obtained.
46. (New) The process as claimed in claim 42, wherein the gel obtained in stage (c) is washed until a pH of at most 4 is obtained.
47. (New) A process for the preparation of a zirconium phosphate further comprising silica, alumina or titanium oxide, comprising the step of bringing into contact the zirconium phosphate as claimed in claim 28 and a precursor of said oxide and, then, precipitating the oxide.
48. (New) A process for the preparation of the zirconium phosphate as claimed in claim 34, comprising the step of mixing an aqueous gel of the zirconium phosphate with an exfoliated structure, provided in the form of a gel, whose content of organic compounds is of at most 1000 ppm, with the organic solvent and then the mixture is heated to remove the water.
48. (New) A process for the preparation of the zirconium phosphate as claimed in claim 35, comprising the step of mixing an aqueous gel of the zirconium phosphate with an exfoliated structure, provided in the form of a gel, whose content of organic compounds is of at most 1000 ppm, with the intercalation compound or with a precursor of the latter.
49. (New) A process for the preparation of the zirconium phosphate as claimed in claim 41, comprising the steps of:

- (a) forming an aqueous dispersion of a crystalline zirconium phosphate;
- (b) adding a sodium compound to said dispersion in an amount such that the Na/P ratio is greater than 0.5, optionally at least equal to 0.8; and
- (c) subsequently adding an acid, whereby the zirconium phosphate is obtained in the solid form in the reaction medium.

50. (New) A process for the preparation of the sodium zirconium phosphate as claimed in claim 37, comprising the steps of:

- (a) forming an aqueous dispersion of a crystalline zirconium phosphate; and
- (b) adding a sodium compound to said dispersion in an amount such that the Na/P ratio is greater than 0.5, optionally at least equal to 0.8.